

REMARKS

In the Final Office Action mailed April 24, 2008, the Office took the following action: (1) rejected claims 1-5, 7-10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Arnon et al., U.S. Patent Publication No. 2002/0114038 (hereinafter "Arnon") in view of Nakano, U.S. Patent No. 6,795,675 (hereinafter "Nakano") and Harres, U.S. Patent No. 6,128,112 (hereinafter "Harres"); (2) rejected claims 32-35, 38-40, and 42-43 under 35 U.S.C. § 103(a) as being unpatentable over Arnon in view of Nakano and Harres and Saunders, U.S. Patent No. 6,259,542 (hereinafter "Saunders"); (3) rejected claims 16, 18-21 and 23 under 35 U.S.C. § 103(a) as being unpatentable over Arnon in view of Harres and Saunders and Nakano; (4) rejected claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Arnon and Nakano and Harres, and in further view of Saunders (5) rejected claim 37 under 35 U.S.C. § 103(a) as being unpatentable over Arnon and Nakano and Harres and Saunders, and further in view of Traa, U.S. Patent No. 6,222,660 (hereinafter "Traa"); (6) rejected claims 24, 26-29, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Arnon in view of Hall et al., U.S. Patent No. 6,577,419 (hereinafter "Hall"), Harres and Saunders and Nakano; and (7) rejected claims 17 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Arnon and Hall and Harres and Saunders and Nakano, and in further view of Tomooka et al, U.S. Patent No. 6,266,169 (hereinafter "Tomooka"). Applicant respectfully traverses and further requests reconsideration and withdrawal of the rejections in view of the foregoing amendments and the following remarks.

Rejections Under 35 U.S.C. § 103(a)

The Office rejected the claims as being unpatentable over Arnon, Nakano, Harres, and/or Saunders (hereinafter "Cited References"), in additionally over Hall and Tomooka regarding selected claims. Applicant respectfully traverses.

Claims 1-5, 7-10, 12-15

Claim 1, as amended, recites:

An apparatus, comprising:

a receiver configured to receive an optical signal and to convert the optical signal to a corresponding electrical signal; and

a monitoring component ~~configured to provide a feedback loop to increase a dynamic range of the receiver when an optical signal is high without measuring a temperature of the surrounding environment of the receiver, the monitoring component to:~~

calculate a noise level of at least a portion of the electrical signal before the electrical signal is amplified by an electrical signal amplifier, and to

compare the noise level with a threshold value, the threshold value being at a point where a breakdown voltage of the receiver is eminent, and to

adjust a gain of the receiver based on the noise level by interrupting an input gain of the receiver,

wherein the monitoring component includes a condition determining component configured to determine at least one of a presence or an absence of light at the receiver.

In the Final Office Action, the Office provided a "Response to Arguments" section to address each individual argument presented by Applicant in the most recent Response to Office Action, which was transmitted to the Office on February 1, 2008 (hereinafter "Last Response"). Applicant thanks the Office for this detailed response to each argument presented in the Last Response; however, Applicant does not necessarily agree with the Office as to each of the Office's responses presented in this section.

Turning to claim 1, Applicant has amended claim 1 to more clearly recite the intended subject matter. For example, in the Final Office Action, at page 2, paragraph 3 to page 3, paragraph 1, the Office states "The claims never recite that the 'apparatus' is operated in environments have extreme temperature variations." As amended, claim 1 now recites "a feedback loop to increase a dynamic range of the receiver when an optical signal is high without

measuring a temperature of the surrounding environment of the receiver.” Therefore, Applicant respectfully requests the Office to reconsider the previously submitted arguments in the Last Response to Office Action in light of the current amendments. More specifically, Applicant submits that the Cited References fail to teach each element of claim 1. The amendment is supported in the specification by at least page 9, lines 4-10. No new matter has been added.

Claim 1 also recites “calculate a noise level of at least a portion of the electrical signal *before the electrical signal is amplified* by an amplifier.” This recitation is similar to a recitation included in claims 17 and 25. The Office relies on Tomooka when rejecting claims 17 and 25 as teaching “a transmitter including an optical amplifier (Figure 1, the optical amplifier 14 or 2).” (Office Action, page 37, paragraph 8, lines 7-8). However, Applicant submits that Tomooka in combination with Cited References, assuming *arguendo* that such combination is proper, fails to teach or suggest, “calculate a noise level of at least a portion of the electrical signal *before the electrical signal is amplified* by an amplifier.” In particular, Applicant emphasizes the particular arrangement of the components of the Noise Feedback Controlled Optical Systems, that is, the apparatus as recited in claim 1, rather than just an identification of the components in unrelated references, such as Tomooka. The amendment is supported in the specification by at least page 9, line 21 to page 10, line 2. No new matter has been added.

In addition, Applicant has amended claim 1 to more clearly recite the threshold value as “the threshold value being at a point where a breakdown voltage of the receiver is eminent.” Applicant has previously argued that Arnon fails to explicitly teach a threshold value. The Office’s responded to this argument by stating:

Arnon teaches to calculate the noise level and use the calculation to control the gain of the APD, it is obvious that a reference value or threshold has been used in Arnon’s system to make a decision to adjust the gain. For control purpose, a criteria must be used to judge the level of the noise so to control the operation of the device being controlled.

Applicant respectfully disagrees that Arnon teaches or suggests the threshold recited by claim 1. Further, Applicant respectfully submits that Arnon fails to teach or suggest the threshold value as recited in amended claim, "the threshold value being at a point where a breakdown voltage of the receiver is eminent." Because Arnon fails to explicitly teach a threshold value, Arnon cannot articulate a threshold value "at a point where a breakdown voltage of the receiver is eminent." The amendment is supported in the specification by at least page 7, lines 7-22. No new matter has been added.

Finally, Applicant has amended claim 1 to recite, "interrupting an input gain of the receiver." This amendment is intended to further clarify the intended operation of the feedback loop as disclosed in claim 1. The amendment is supported in the specification by at least page 7, lines 7-22. No new matter has been added.

Claims 2-5, 7-10, and 12-15 are dependent on base claim 1 and are at least allowable for their dependence upon an allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 1-5, 7-10, and 12-15.

Claims 16-21, 23

Applicant has amended claim 16 in a similar manner as claim 1, and therefore relies on similar reasoning as presented above in support of claim 1, as applied to claim 16. Claims 17-21 and 23 are dependent on base claim 16 and are at least allowable for their dependence upon an allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 16-21 and 23.

Claims 24-29, 31

Applicant has amended claim 24 in a similar manner as claim 1, and therefore relies on similar reasoning as presented above in support of claim 1, as applied to claim 24. Claims 25-29 and 31 are dependent on base claim 24 and are at least allowable for their dependence upon an

allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 24-29 and 31.

Claims 32-35, 37-40, 42-43

Applicant has amended claim 32 in a similar manner as claim 1, and therefore relies on similar reasoning as presented above in support of claim 1, as applied to claim 32. Claims 33-35, 37-40, and 42-43 are dependent on base claim 32 and are at least allowable for their dependence upon an allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 32-35, 37-40, and 42-43.

Pending claims 1-5, 7-10, 12-21, 23-29, 31-35, 37-40, 42, and 43

Applicant respectfully submits a similar motivational argument as presented in the Last Response in opposition to the Offices combination of the Cited References in the pending rejection under Section 103(a), as follows.

The Office has found it necessary to combine four references (Arnon, Nakano, and Harres) to teach each limitation of each pending independent claim (1, 16, 24, and 32). Applicant reminds the Office of a longstanding rule: "In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious." (*M.P.E.P. §2141.02 citing Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed Cir. 1983), emphasis original.)

After KSR, the MPEP states: "The mere fact that references can be combined or modified does not render the resultant combination obvious unless . . . the results would have been predictable to one of ordinary skill in the art. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) ("If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has

been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.") (MPEP §2143.01, emphasis added). Applicant highlights the phrase "unless its application is beyond his or her skill." As applied to the instant rejection, Applicant respectfully submits that the application of the apparatus, as recited in claim 1, is beyond the skill of a person of ordinary skill in the art because that person would not consider 1) environments having extreme temperature variations in which the apparatus may be operated, and 2) the advantages of comparing noise level with a threshold to advantageously improve the apparatus's operation in environments subjected to extreme temperature variations.

As noted above in KSR, a motivation requirement still exists in patent law. The Office may not pick and choose minute teachings from various prior art to assemble the invention described by Applicant. As a primary example, the Office suggests that the "threshold value" can be inferred in Arnon. However, as the Office stated previously and Applicant agrees, "Arnon does not expressly state . . . a threshold value." Further, case law supports Applicant's position: "Inherency. . . may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." (*In re Oelrich*, 666 F.2d 578,581, 212 USPQ 323, 326 (C.C.P.A. 1981) *citing* *Hansgirk v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (C.C.P.A. 1939), emphasis added.) In particular, Arnon fails to teach or suggest "the threshold value being at a point where a breakdown voltage of the receiver is eminent."

In this instance, the Office includes a statement of motivation which states, "Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a threshold value in the system of Arnon so that the gain of the APD can be better controlled and the signal quality can be improved." Applicants respectfully suggest that this statement is conclusory and does not pinpoint motivation from either Arnon or Nakano, or one of ordinary skill in the art. Further, Applicant respectfully submits that motivation is lacking for

combination for each of the Cited References, as identified above in the specific remarks addressing the amendments to claims 1, 16, 24, and 32, or as identified in the Last Response.


CONCLUSION

Accordingly, Applicants respectfully submit that pending claims 1-5, 7-10, 12-21, 23-29, 31-35, 37-40, 42, and 43 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

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By: _____


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